# ABSTRACT OF THE DISCLOSURE

In an apparatus and method for measuring retardance and slow axis azimuth in sample specimens, a sample is illuminated by circularly polarized monochromatic light which is then analyzed by an elliptical analyzer at different settings. In another embodiment, light conditioned by an elliptical polarizer at various settings illuminates a specimen and the beam exiting the sample is analyzed by a circular analyzer. The elliptical analyzer/polarizer may have selectable ellipticity and azimuth angle, including in some cases a setting of circular polarization. Background images obtained with selected settings of the elliptical analyzer/polarizer, but without the sample present, are used in some embodiments to improve the measurement.